DOCUMENT RESUME

ED 143 457 PS 009 486

AUTHOR Barclay, James R.; Wu, Wu-Tien
TITLE Classroom Climates in Chinese and American Elementary Schools: A Cross-Cultural Study.
PUB DATE Mar 77
NOTE 34p.; Paper presented at the Biennial Meeting of the Society for Research in Child Development (New Orleans, Louisiana, March 17-20, 1977)

EDRS PRICE MF-$0.83 HC-$2.06 Plus Postage.
DESCRIPTORS Academic Achievement; *Classroom Environment; Classroom Research; *Comparative Education; *Cross Cultural Studies; Cultural Differences; Cultural Factors; *Educational Anthropology; *Elementary Education; Elementary School Students; Sex Differences; Socioeconomic Status; Student Characteristics
IDENTIFIERS *Barclay Classroom Climate Inventory; *China

ABSTRACT

This study is a cross-cultural comparison of elementary classroom climates on a multi-method, multi-score inventory (The Barclay Classroom Climate Inventory). Subjects of the study were 438 children in grades 3-6 from two elementary schools in Taiwan and 512 children from the same grades in two Indiana classrooms. Utilizing multivariate procedures, differences within Chinese culture, and between Chinese and American cultures were analyzed by sex, grade, socio-economic status and achievement. In addition, the effects of achievement and intelligence as well as independent teacher assessment of students were examined in the Chinese culture. Summary findings are discussed. The results strongly suggest that multi-dimensional cross-cultural studies provide a key to specific support systems that provide socialization through formal education. (Author/BD)

****
* Documents acquired by ERIC include many informal unpublished *
* materials not available from other sources. ERIC makes every effort *
* to obtain the best copy available. Nevertheless, items of marginal *
* reproducibility are often encountered and this affects the quality *
* of the microfiche and hardcopy reproductions ERIC makes available *
* via the ERIC Document Reproduction Service (EDRS). EDRS is not *
* responsible for the quality of the original document. Reproductions *
* supplied by EDRS are the best that can be made from the original. *
****

ED143457

U S DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
NATIONAL INSTITUTE OF
EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL NATIONAL INSTITUTE OF EDUCATION POSITION OR POLICY

Classroom Climates in Chinese and American Elementary Schools: A Cross-Cultural Study

James R. Barclay Ph.D.*

and

Wu-Tien Wu Ph.D.

PS009486

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

James R. Barclay

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND THE ERIC SYSTEM CONTRACTORS."

* James R. Barclay is professor, Department of Educational Psychology and Counseling, and Department of Psychology, University of Kentucky.

Wu-Tien Wu is associate professor, Department of Educational Psychology, National Normal University, Taipei, Republic of China.

Classroom Climates in Chinese and American Elementary Schools:

A Cross-Cultural Study

Abstract

This study is a cross-cultural comparison of elementary classroom climates on a multi-method, multi-source inventory (The Barclay Classroom Climate Inventory). Utilizing multivariate procedures, differences within Chinese culture, and between Chinese and American cultures were analyzed by sex, grade, socio-economic status and achievement. In addition, the effects of achievement and intelligence as well as independent teacher assessment of students were examined in the Chinese culture. The results suggest strongly that multi-dimensional cross-cultural studies provide a key to the specific support systems that provide socialization through formal education.

Classroom Climates in Chinese and American Elementary Schools: A Cross- Cultural Study

Cross-cultural research has attracted a growing number of social scientists. However, only a few (7 percent) of the studies that have been reported are concerned with school-related behavior or achievement (Brislin, et al., 1973). None of the studies reported are concerned with multiple variables and inputs relating to classroom climate. This is unfortunate because the classroom climate study represents assumptions concerning relations between psychological process and culture (Whiting, 1968) and because climate really represents the mediating role between individuals and ecological press variables.

Previous research on classroom ecological variables has indicated that optimum school adjustment is related to the environmental "press" (Randhawa and Fu, 1973; Barclay, 1974 c). Achievement itself is multi-dimensional (Jackson, Ahmed and Heapy,1976),is influenced by expectations from teachers and peers (Brophy and Good, 1970, 1974; Schmuck & Schmuck, 1973; Kehle, 1972), and is influenced strongly by an interactive matrix of abilities, expectations and behavioral consequences.

The components of this interactive matrix,though not completely identified, appear to involve sex, grade, socioeconomic and behavioral dimensions. The existence of different expectations for the sexes and the transmission of these differences to ratings has been well documented (Jensen, 1955). Teacher expectation bias tends to favor girls over boys (Meyer & Thompson, 1956; Antonoplos, 1971; Brophy & Good, 1974; Kehle, 1972). Girls tend to have a more compatible relationship with teachers (Schmuck & Egmond, 1965). Socioeconomic status appears to be related to aspects of social adjustment and achievement (Coleman, 1966; Jencks, 1972; Wylie, 1961, 1974; Lightfoot, 1972; Barclay, Stilwell

and Barclay, 1972). Achievement itself acts also as a reinforcer on self-concept and other social desirability projection measures (Withall & Lewis, 1963; Quick, 1973; Kifer, 1975; Hoehn, 1954; Lahaderne, 1967; Oppenlander, 1969; Good, 1970). Moreover, there seems to be an established relationship between early academic failure experiences and (a) general and academic self-concept, (b) attitude towards school, (c) perceived parental behavior, and (d) peer relationships in the classroom (Glick, 1972; Anderson, 1970; Vakil, 1970; Kidder, 1971; and St. John, 1971).

Many of these relationships have been established by behavioral and observational measures in addition to the previous psychometric studies. A linkage has been documented between peer-teacher support systems and student outcomes (Flanders, 1965; Hughes, 1959; Walberg and Anderson, 1968; Walberg, 1971; and Spivack and Swift, 1966).

Though many studies have documented the covariance of one measure or the other with poor achievement or maladaptive behavior, it is in the analysis of the total ecological impact of teacher-peer-self interactions that classroom climate becomes most important. Emphasis here is placed on the interactive focus of many inputs and variables. For if intervention is to be engineered it is important to capture as many of the relevant determinants to behavior at once as can be managed. Barclay in a series of studies (1966a, 1966b, 1966c, 1966d, 1967, 1972, 1973, 1974a, 1974b, 1974c) has developed a multi-trait, multi-method system for evaluating the ecology of the elementary classroom. The inventory is based on self-report from students, peer judgments, and teacher expectations. Using Jackson's multi-trait, multi-method (1969) approach to convergent and discriminant validity (Tapp & Barclay, 1974), the specific support system for an individual is determined within the group setting. Discrepancies in support systems and the emergence of specific problem areas then provides a basis for functional strategy determination.

The purpose of this study was to determine differences that exist between American and Chinese cultural samples using a multi-trait, multi-method system for analyzing the individual within the ecological support system of the classroom.

Method

Since classroom climate studies in cross-cultural dimensions have usually been related to one or two at the most input methods (self-report, ratings, observations), it was important to determine adequate criteria for multi-method, multi-trait cultural comparisons.[1] Triandis (1972) suggested that researchers should attempt to establish the equivalence of constructs across cultures by showing similar etic antecedents and consequences for each construct, as well as emic approaches. By etic is meant the notion of incorporating the behavior of several cultures under a unified theory, and by emic is meant the understanding of a particular culture. In this study, during the process of translation of the instrumentation each concept, each item was scrutinized to determine the appropriateness of the construct. The investigators both had experience - one in American culture, and the other in Chinese (Taiwanese) culture. Some items were changed to be appropriate for the Chinese sample.

---

[1] No other multi-trait multi-method cross-cultural study is known to the authors. Most other cross-cultural studies have generally been related to one input approach. For example, Swift et al. (1972) analyzed the composition of achievement-impeding classroom behaviors in France and the United States using the Devereux Elementary School Behavior Rating Scale. Bronfenbrenner (1970) investigated the effects of social structure variables for Russian and American children in terms of major socializing agents for persons. Borke and Su (1972) compared the perception of emotional responses to social interactions between Chinese and American children on short stories describing different emotional situations. Chiu (1971) looked at manifested anxiety in Chinese and American children using a Chinese version of the Children's Manifest Anxiety Scale. Stodolsky and Lesser (1967) compared several ethnic groups on patterns of mental abilities.

Subjects

The subjects of this study were 438 third-to-sixth grade pupils taken from two elementary schools in Taiwan, believed to be representative of the Chinese (Taiwan) elementary school population. The sampling procedures involved the following steps:

1. In Taichung, a central Taiwan city with a population of approximately 300,000, two elementary schools were randomly selected - Chung-Hsiao Elementary School and Ching-Kung Elementary School.

2. In each school, one class was randomly selected from grades 3, 4, 5, and 6 respectively.

3. Because each class size was larger than 35, for the accuracy of the sociometric choices (the BCCI specifies that classes should range from 20-35 in accordance with American groups tested) each class was randomly divided into two groups with equal sex and equal number balance. Each group was considered as a separate class unit. Therefore, there were actually the equivalent of 16 classes composed of 438 pupils who took the BCCI and were studied.

The American sample consisted of 512 third-to-sixth grade pupils drawn from two elementary schools in Terre Haute, Vigo County, Indiana. This sample was chosen arbitrarily because it was believed to represent children from a medium-sized city in the Midwest of the United States, and there was a full range of socio-economic difference. To match the Chinese sample , 16 classes were randomly drawn from the available 32 classes. There were 4 classes in each of the third-to-sixth grades, half of which were from the one school and half from the other. The testing took place in both instances during the 1974-75 school year.

Instrumentation

The major assessment instrument for this study was the Chinese version of the BCCI. In addition, the Ravens Progressive Matrices were used to assess intelligence of the Chinese sample only.

A locally obtained Grade Average was also computed only on the Chinese subjects and achievement was considered the average score on mathematics, social science and natural science. In addition, teachers in the Chinese schools were asked to independently nominate the two best liked and least liked students in each class. Finally, to measure the appropriateness of the BCCI in terms of suspected problem categories, an evaluation form was given to each classroom teacher about a month after the administration of the BCCI. The teacher was asked to check those who had the following problems on an all-or-none basis: learning problems, disruptive problems, reticent problems, physical handicaps, and emotional disturbance. In addition, teachers were also asked to check three kinds of favorable students: the best academically, the most creative, and the most socially oriented.

The chief instrumentation was the BCCI. The BCCI is a multi-method, multi-trait inventory composed of self-report, peer nominations, and teacher judgments. Inputs from self, peers and teachers are integrated via a computer system into a written report that describes individual characteristics in classroom interaction. The instrumentation is related basically to social, enterprising, intellectual, artistic and mechanical skills, is appropriate to grades three through six, and issues in a prescription (where relevant) to teachers for effecting change in the support system of a child. (Barclay 1974a)

An inspection of the items of the BCCI indicated that the vast majority were appropriate to Chinese culture as it exists in Taiwan. Therefore, it was translated into Chinese by the junior author . All items were carefully scrutinized to avoid semantic distortion before the version was finalized.

Hypotheses

The hypotheses of this study were related to within culture comparisons, between culture comparisons, and a cross-cultural validity study of the BCCI.

Within Culture Comparisons

HO 1 There will be significant differences on BCCI variables between Chinese boys and girls.

HO 2 There will be significant main effects of selected Chinese pupil characteristics (i.e., grade, socioeconomic status, and academic achievement) on certain BCCI variables.

HO 3 There will be significant interactions of selected Chinese pupil characteristics (i.e., grade, socioeconomic status, and academic achievement) on certain BCCI variables.

Between Culture Comparisons

HO 4 There will be significant main effects of selected Chinese and American pupil characteristics (i.e., culture, sex, and grade) on certain BCCI variables.

HO 5 There will be significant interactions of selected Chinese and American pupil characteristics (i.e., culture, sex, and grade) on certain BCCI variables.

Cross-Cultural Validity of the BCCI

HO 6 There will be significant relations between BCCI variables and a Chinese pupil's intellectual and academic performance.

HO 7 There will be significant differences on the BCCI variables between the pupils the teacher likes best and the pupils the teacher likes least in Chinese elementary schools.

HO 8 There will be significant relations between BCCI suspected problems and Chinese teacher-judged pupil problems.

Design

The research design of this study is multiphasic in nature. To fit the goals of the study independent and dependent variables were identified as follows: For within culture comparisons the independent variables were sex, grade socioeconomic status of parents, and academic achievement. Twenty-two independent BCCI scales relating to self-competenc peer nominations and teacher expectations were identified as the dependent variables along with the six multi-method, multi-trait factor scores of

For the between culture comparisons the independent variables were culture, sex and grade with the same dependent variables.[2] For the empirical validation part of the study the independent variables were intelligence, the 22 BCCI scores and 6 factors, and the suspected problems of the BCCI.[3] The dependent variables were the originally designed estimate of teacher judged problems, the nomination of students who were liked very well or not liked, and those who possessed exceptional characteristics.

---

[2] The following are the BCCI scales used in these studies. STOT (total self-competence), a measure of how competent the child is in a number of skill areas; GR (Group Reticent Nominations), a measure of peer nominations relating to shy, withdrawn and passive behaviors; GD(Group Disruptive Nominations), a measure of peer nominations relating to disruptive, noisy and aggressive actions; GTOT (Group Total Nominations), the sum of all nominations obtained from the peer group indicative of the quality and extent of positive social support existing in the peer group for this individual; REAL(Vocational Realistic-Outdoor), a measure of interest in outdoor and manual skills; INT (Vocational Intellectual), a measure of interest in intellectual and scientific skill areas; SOC (Vocational Social), a measure of interest in social and affiliative skills; CONV (Vocational Conventional-Clerical), a measure of interest in clerical and office skill interests; ENTR (Vocational Enterprising), a measure relating to law and business interests; ART(Vocational Artistic), a measure relating to artistic and musical skills; CNT(Vocational Control), a measure relating to being cautious about risk-taking interests; ST (Vocational Status) a measure relating to high social prestige occupations; TR+(Teacher Positive Ratings), the sum of total positive adjectives chosen by the teacher to describe the child; TR- (Teacher Negative Ratings) the sum of total negative adjectives chosen by the teacher to describe the child; SSR (Self-Stimulating Reinforcers), a measure of interest in self-stimulating activities; ESR (Esthetic Reinforcers),a measure of interests in esthetic activities; ITR (Intellectual Task-Orientation), a measure relating to teacher praise and achievement behavior; FRR (Family Reinforcers),a measure relating to activities shared with parents and other family members; CNV(Conventional Reinforcers), a measure relating to interests in money, candy, pop etc.,); PRM (Peer Male Reinforcers), a measure in interests relating to male peer group activities; PRF (Peer Female Reinforcers), a measure relating to interests in female peer group activities, and CCI (Classroom Climate Index) a measure relating to satisfaction with school experience. In addition six multi-source factor scores were used. They are I (Achievement-Motivation), II (Impulsivity-Aggressiveness, III,Introversion-Seclusiveness), IV(Energy-Activity), V (Sociability-Affiliation) and VI (Enterprising-Dominance).

[3] One byproduct of the BCCI is the identification of suspected problem areas relating to self-competency, reticence, self-control, cognitive-motivation, vocational deficits, group interaction problems, and attitude deficits. These suspected problems are derived from internal analyses of data and serve as foci for possible interventions.

The hypotheses of these studies were tested in the following manner. Evidence for the first hypothesis was tested by a one-way (sex) multivariate and univariate analysis of variance. Evidence for the second and third hypotheses was tested by a three-way (grade x SES x achievement) multivariate and univariate analysis of variance. Evidence for the fourth and fifth hypotheses was tested by a three-way (culture x sex x grade) multivariate and univariate analysis of variance. Evidence for the sixth hypothesis was tested by a step-wise multiple regression analysis. Evidence for the seventh hypothesis was tested by a step-wise discriminant analysis. Evidence for the eighth hypothesis was tested by simple correlational analysis.[4]

Results

Because of the multitude of results obtained from these analyses, only the summary findings will be presented. The results will be presented in three parts in accordance with the research design of the study, i.e., within culture comparisons, between culture comparisons, and cross-cultural validity of the BCCI. The statistical significance was set at the .05 level throughout the study.

---

[4] The following inferences were utilized in statistical analysis: (1) the univariate statistics were used for deciding whether or not the general hypotheses were supported, while the multivariate statistic was used as a reference index for interpreting the univariate results. If the multivariate statistic was significant, the univeriate results were then explained. If not, the univariate results were considered "suggestive ";(2) scine there were unequal cell sizes, the signifiance tests for the main effects are not indepdent, therefore significant main effects were interpreted on the basis of having eliminated the effects of other independent variables in the design, provided no significant interaction existed (Bock & Haggard, 1968). Helmert contrasts were used to determine where the differences were: for example in a three-level independent variable, comparing level 1 to the average of levels 2 and 3, and level 2 with level 3 respectively.

Within Culture Comparisons

Tables 1 and 2 provide a summary of the within culture comparisons by sex, and then by grade, socioeconomic status, and achievement.

-- insert tables 1 & 2 about here ---

The results of the analyses indicate that boys and girls within the Chinese sample differed significantly on most BCCI scales and factor scores. Boys were seen by their peer group as more disruptive and impulsive than girls. On the vocational scales boys were more interested in outdoor skills and scientific work than girls. On the reinforcer scales boys tended to identify more with the male peer group, while girls were in favor of female-oriented reinforcers; boys showed a higher school orientation, while girls showed a higher family orientation. On the factor scores indicated that boys were viewed as more impulsive, aggressive and showed a strong drive for leadership and success than girls.

In table 2 the effects of grade, SES, and achievement differences are summarized. Considering both boys and girls, the effects of grade on classroom climate on a cross-sectional basis were relatively complex. In general, the grade effects were more consistent for boys than for girls and in many respects significantly interacted with SES. However, the salient findings were: (1) children in the lower grades , with the exception of middle-class boys tended to have a higher self-competency than children in the higher grades; (2) boys in the lower grades tended to be more interested in social and high prestige occupations than those in the higher grades;(3) boys in the lower grades showed both a higher favorable school orientation and family orientation than boys in the higher grades; (4) children in the lower grades expressed more satisfying feelings towards classroom learning than children in the higher grades.

With regard to the effects of SES on classroom climate, these findings are more complex. In general, the SES effects were more consistent for girls than for boys and in many aspects significantly interacted with the grade. However, the prominent findings were: (1) lower class boys were more preoccupied with the occupations which are people-oriented; (2) lower class girls had a strong tendency to avoid contact with teachers and to suppress their conventional needs, but did express more interests in clerical vocations.

The effects of achievement on classroom climate were pertinent and consistent for both sexes. The major findings were: (1) pupils with higher achievement earned not only more peer support, but also more teacher approval than pupils with lower achievement; (2) pupils with lower achievement obtained both more disruptive criticisms from peers and more negative ratings from teachers; (3) pupils with higher achievement appeared to have a higher degree of motivation, energy, sociability and enterprising behavior than pupils with lower achievement; (4) pupils with lower achievement tended to have a higher degree of impulsivity and introversion than pupils with higher achievement.

There were a number of two-way and three-way significant interactions within each sex. In general, the interaction effects were generated by grade and SES. The salient findings were: (1) for boys, the middle class group expressed positive developmental trends from lower grades to higher grades in particular reference to increasing self-competency and widening range of vocational interests. They also became less introverted; the other SES male groups tended to diminish in self-competency and vocational interests and to show an elevation in introversion-seclusiveness; (2) for girls, the cross-sectional based developmental trend generally favored the upper class group with observed increases in self-competency, achievement motivation, and sociability with subsequent decreases in

negative teacher ratings and introversion; (3) in lower grades, teachers tended to give low-achieving children from upper class families the most negative evaluations; however, these criticisms were reduced when the same status children were in higher grades;(4) on the basis of SES and achievement, boys with higher achievement from lower class families earned the most positive teacher ratings. For girls, however, this was not necessarily true. In summary, the analysis of data then supports the first three hypotheses of this study relating to sex differences, main effects on grade, SES, and achievement variables, and significant interactions thereof.

Between Culture Comparisons

The overall summary of P values obtained as a result of three-way multivariate and univariate analyses for cross-cultural comparisons on the BCCI scale scores and factor scores are displayed in table 3.

--- insert table 3 about here ---

There are a number of prominent conclusions that can be drawn from the between culture comparisons. (1) The grade effects on classroom climate tend to be fairly consistent across cultures, while sex effects tend to interact significantly and differently on a number of variables. For example, the similarities in classroom climate between Chinese and American samples appear to be:(a) that boys , as compared with girls, are often judged as more disruptive, (b) are more often rated less favorably by teachers, (c) are more often interested to a larger extent in outdoor, physical and intellectual-scientific interests, and (d) are more prone to take risks. These effects appear to be related to sex across cultures. Again, children in both cultures

in lower grades as against higher grades, hold higher regard for their self-competencies, show a greater range of career interests, and are more content with the classroom climate. (2) Cross cultural differences are found in the fact that Chinese pupils, as compared with the American sample, expressed more interests in intellectual-scientific skills and high prestige jobs, reflected a more controlled and conservative approach to risk-taking in occupational choices and tended to be more enterprising. (3) Interaction patterns of sex and culture provided some interesting observations: (a) American boys earned more negative teacher ratings, and expressed a less positive attitude towards the classroom situation than did Chinese boys. Though boys in both cultures received more negative ratings from teachers, the differences between the two male groups were greater than between the two female groups; (b) on the achievement-motivation factor, Chinese boys tended to manifest a higher drive for achievement than American boys, while Chinese girls appeared to show a lower achievement-motivation than American girls; (c) Chinese boys tended to manifest a higher level of introversion-seclusiveness than American boys. In summary then, the data analysis appeared to support the hypotheses relating to between culture comparisons.

Cross-Cultural Validity of the BCCI

An obvious concern in any cross-cultural study is the validity of the instrument translated into another language and used in another culture. A number of procedures were utilized to establish the validity of the instrument used in this research. The first procedure was to utilize the Chinese pupils' academic performance as a criterion. The analysis procedure for this method was contained in two steps: first,

BCCI variables were correlated with the criterion respectively; second, a step-wise multiple regression analysis (Trailkill & Davis,1970) was used to examine the contribution of BCCI variables along with the intelligence variable in the prediction equation. Table 4 presents the correlations between the BCCI scores, intelligence (as measured by the T scores of the Ravens Progressive Matrices) and both pre and post achievement testing. Table 5 presents the same results for the factor scores. Table 6 then summarizes the step-wise multiple regressions.

--- insert tables 4, 5, 6 about here ---

Utilizing the post-test achievement as the specific criterion (obtained approximately six months after BCCI testing), it can be noted that 9 of the 22 BCCI scales predicted (p at .05) boys' post-achievement scores and 12 of the 22 BCCI scales predicted girls' post-achievement scores. The factor scores were significantly related to post-achievement for both boys and girls. Turning to the step-wise multiple correlations the results indicate that significant increments of R^2 are accounted for up to 39 percent of the variance in the cognitive criterion with 9 BCCI predictors plus an intelligence index in the case of boys, and a similar total variance accounted for up to 43 percent for girls. Similar findings, but with a lower percentage of variance are obtained for the prediction of achievement from factor scores and intelligence. The evidence from the analysis thus provided strong support for the sixth hypothesis that there are significant relations between BCCI variables and the Chinese pupil's academic performance.

Another criterion of cultural validity is the determination of relationship of the BCCI components to independent teacher judgments. Each Chinese teacher was asked to nominate the two best liked boys and girls and conversely the least liked boys and girls. An analysis of variance between these two groups indicated substantial differences on the dependent variables. The factor scores were chosen for this analysis because they contain components of self-report and peer judgments as well as teacher expectations. [6] Table 7 reports these data.

--- insert table 7 about here ---

Implications

The evidence provided through the data analysis is supportive of the hypotheses posed in this study. The multi-trait, multi-method approach to the measurement of classroom climate documents differences both within Chinese culture and between Chinese and American cultures. Achievement, teacher expectations, peer support systems and socio-economic patterns of nurturance appear to be cross-cultural indices that specify interaction characteristics of individuals in a group setting. Further, the independent ratings of Chinese teachers document the validity of the BCCI system for the analysis of Chinese classroom climate variables

---

[6] Further studies were carried out in support of congruence between Chinese teacher judgments relative to suspected problems and the identification procedure used by the BCCI. These included a number of multiple discriminant analyses in which "best" and "least" liked teacher nominees were identified in excellent fashion by a limited numbe of predictor variables. Since these further analyses are essentially confirmatory of the data thus far presented, they will not be reported.

suggesting strongly that teacher expectations, peer nominations, and achievement capabilities though subject to the specific criterion press of different cultures and life-styles constitute some invariant environmenta forces that affect the personal and social development of individuals in a different manner.

Chinese Sex Role in Classroom Climate

Initially, the writers examined the relationship between sex role and classroom climate as assessed by the BCCI within the Chinese culture. The differences exist not only in biological characteristics but also in many other socializing aspects. It was thus not surprising to find that Chinese boys differed from Chinese girls on a number of variables similar to those obtained in the United States. It is interesting to note that many of the sex differences that appeared in the Chinese sample seemed to be quite consistent with every day observations made by the social psychologist Lindgren (1969). He indicated that research tends to confirm everyday observations that males are more inclined to be adventurous, aggressive, active, interested in violence and thing-oriented, whereas females tend to be more cautious, accepting, sympathetic, passive, and people-oriented. Though many of these differences were observed in the Chinese sample, there were however, several salient sex differences that appeared in the Chinese classroom which seemed to have meaning specific to the given Chinese cultural context.

What is specifically noted are the implications of socialization. For in Chinese society the differentiation between sex roles is prominent. Usually the female is expected to take responsibility inside the home, while the male is expected to take responsibility outside the home. This ideology is imprinted in the young Chinese in the sense that boys in this study showed a stronger school-orientation with a need to be praised by the teacher, while girls showed a stronger family-orientation with a

need to be praised by parents. Those who have had experience with middle or higher class families in Taiwan might find that if a girl helps her mother clean the house or wash the dishes, the mother is pleased; however, if a boy asks to do so, the mother's reply usually is "go back and do your homework."

A second socializing consequence is also found in the BCCI. In Chinese society the male is more motivated toward social involvement than the female. The female according to Hsu (1971, p.283) " is permanently precluded from ever reaching a status equal to that of any male. She is much more limited than is the male in her efforts and in the objectives of competition." This expectation results in a male-centered social interaction system. The expectations are also reflected in the classroom since boys earned more nominations (GTOT) as well as disruptive criticisms (GD) from peers. As a consequence, boys tended to experience more pressure from the environment, and in the end expressed more unhappy feelings toward classroom learning.

Grade, SES and Achievement in the Chinese Cultural Setting

The results of this study clearly indicated that the achievement factor was a substantial influence on the classroom climate. The differences between achievement levels were expected and in many aspects consistent with general research findings. For example, they show that in general a Chinese pupil with higher achievement not only earned more peer support, but alsc teacher approval, while the pupil with lower achievement obtained more negative criticism from peers and more negative evaluation from the teacher. This confirms the work of Withall and Lewis (1963) and Good(1970) that achievement is related to social acceptability and teacher's approval.

However, there are at least two points which are specific to the Chinese cultural context. First, contrary to most findings that successful achievement leads to an enhanced self-concept while underachievers sadly underestimate themselves (Alexander, 1964; Hamacheck, 1969; Anderson, 1970; St. John, 1971; Quick, 1973), this study suggests that there are no differences in self-competency (STOT) in respect to achievement level. It should be noted that in the Chinese culture modesty is a virtue, a tendency of the Chinese to underplay all matters of the heart (Hsu, 1970) rather than to reveal oneself. An intelligent Chinese usually knows how to say less in order to gain more, while a fool blows his own trumpet. It is thus very likely that this self-competency dimension has been confounded with social desirability which in large part decreases the self-estimation for the higher achiever. Secondly, as far as SES and achievement are concerned, the most favorable boys in the Chinese teacher's eyes, as indicated in this study, were the boys who came from poor families with higher achievement rather than those who came from the upper class with higher achievement. This probably reflects a special value system prevalent in Chinese society for a thousand years and still vivid in the present time in Taiwan. This is, that in the cultural value hierarchy, intellectual-artistic achievement is usually ranked as number one, while the most praised scholars in the literature are those who were poor earlier and successful later. Because the present Chinese school teachers came mostly from the middle or lower classes, this value orientation is thus even easily identified. However, it should be noted that this is true for boys but not true for girls. For girls to be the most favored, one still must be born into a fortunate family. This, again, reflects a sex inequality of expectation in the male-centered society.

Effects of Culture on Classroom Climate

In this study a number of cultural differences were translated into psychometric variations in self-competency, peer support and teacher expectations. By comparison with the American sample, the Chinese pupils:(1) expressed more interests in intellectual-scientific skills, (2) showed a higher degree of vocational limitation or restriction, possibly showing more discrimination or selectivity, (3) appeared to be more enterprising and energetic in fulfillment of school tasks, (4) were somewhat more introverted and guarded in emotional expression, and (5) less overtly aggressive.

Though the results of a multi-source comparison are more dramatic when viewed in a cross-cultural study, similar discriminating judgments have been obtained between inner-city and suburban schools, (Barclay, 1974c). It has been suggested to practitioners in education that the determination of the affective and cognitive climate of a classroom becomes meaningful only when these aspects are related to learning outcomes, either in terms of attitude change or achievement gains (Nielsen & Kirk, 1974). The instrumentation described here, and the results obtained suggest that a multi-trait multi-method assessment approach does have relevance both to within cultural settings and between cultural settings. This is specifically so if the method is computerized and results can be obtained on many dimensions simultaneously.

Summary

This study has examined with-in cultural comparisons, and between cultural comparisons for a sample of American and Chinese students utilizing a multi-method, multi-trait approach. The findings of the study suggest strongly that patterns of socialization and psychological-sociological support systems can be accurately diagnosed and utilized for possible intervention strategies.

References

Alaxander, E.D. The marking system and poor achievement. Teachers College Journal, 1964, 36, 110-113.

Anderson, G.J. Effects of classroom social climate on individual learning. American Educational Research Journal, 1970, 7, 135-152.

Antonoplos, D.P. Interactions of teacher-pupil sex as expressed by teacher expectations, patterns of reinforcement and judgments about pupils: a national study. Unpublished doctoral dissertation, Indiana University, 1971.

Barclay, J.R. Sociometric choices and teacher ratings as predictors of school dropouts. Journal of School Psychology, 4, #2, Winter, 1966, 40-44 (a).

Barclay, J.R. Interest patterns associated with measures of social desirability: some implications for dropouts and the culturally disadvantaged. Personnel and Guidance Journal, 45, #1, 1966, 56-60 (b).

Barclay, J.R. Variability in sociometric scores and teacher ratings as related to teacher age and sex. Journal of School Psychology, 5, #1, 1966, 52-58 (c).

Barclay, J.R. Sociometry: rationale and technique for effecting behavior change in the elementary school. Personnel and Guidance Journal, 44, #10, 1966, 1067-1076 (d).

Barclay, J.R. Effecting behavior change in the elementary classroom: an exploratory study. Journal of Counseling Psychology, 14, #3, 1967, 240-247.

Barclay, J.R. The Barclay Classroom Climate Inventory: A Research Manual and Studies. Lexington, Kentucky, Educational Skills Development Inc., 1972.

Barclay, J.R. Multiple input assessment and preventive intervention. School Psychology Digest, 1973, 2, 13-18.

Barclay, J.R. The Barclay Classroom Climate Inventory: A Users Manual. Lexington, Kentucky, Educational Skills Development Inc., 1974 (a).

Barclay, J.R. Needs assessment in the elementary school. Chapter in Evaluation of Educational Performance: A Sourcebook of Methods, Instruments and Examples. H.J. Walberg (ed.), McCutchan Publishing Co., Berkeley, California, 1974, 47-56 (b).

Barclay, J.R. System-wide analysis of social interaction and affective problems in schools. Chapter in Evaluation of Behavioral Programs in Community, Residential, and School Settings. Park O. Davidson, Frank W. Clark, and Leo A. Hamerlynck (editors). Proceedings of the Fifth International Conference on Behavior Modification. Research Press, Champaign, Illinois, 1974, 329-396 (c).

Barclay, J.R., Stilwell, W.E., and Barclay, L.K. The influence of paternal occupation on social interaction measures in elementary school children. Journal of Vocational Behavior, 2, 1972, 433-446.

Bock, R.D. & Haggard, E.A. The use of multivariate analysis of variance in behavioral research. Chapter in D.K. Whitla (ed.) Handbook of Measurement and Assessment in the Behavioral Sciences. Reading, Mass.: Addison-Wesley, 1968, 100-142.

Borke, H., & Su, S. Perception of emotional responses to social interactions by Chinese and American children. Journal of Cross-Cultural Psychology, 1972, 3, 309-314.

Brislin, R.W., Lonner, W.J., & Thorndike, R.M. Cross-cultural Research Methods. New York: John Wiley & Sons, Inc., 1973.

Bronfenbrenner, U. Reaction to social pressure from adults vs. peers among Soviet day school and boarding school pupils in the perspective of an American sample. Journal of Personality and Social Psychology, 1970, 15, 179-189.

Brophy, J.E. and Good, T.L. Teachers' communication of differential expectations for children's classroom performance: some behavioral data. AERA National Meeting, Minneapolis, Minn., 1970.

Brophy, J.E., and Good, T.L. Teacher-Student Relationships, Causes and Consequences. Holt, Rinehart & Winston, New York, 1974.

Chiu, L.H. Manifested anxiety in Chinese and American children. Journal of Psychology, 1971, 79 , 273-284.

Coleman, J.S. Equality of Educational Opportunity. U.S. Department of Health, Education and Welfare, U.S. Office of Education, OE-38001, Washington, D.C., 1966.

Flanders, N.A. Teacher influence, pupil attitudes and achievement. Washington D.C., U.S. Government Printing Office, Cooperative Research Monograph, No. 12, 1965.

Glick, O. Some social-emotional consequences of early inadequate acquisition of reading skills. Journal of Educational Psychology, 1972, 63, 253-257.

Good, T.L. Which pupils do teachers call on ? Elementary School Journal, 1970, 70, 190-198.

Hamachek, D.E. Self-concept as related to motivation and learning. In H.F. Clarizio (ed.), Mental Health and the Educative Process: Selected Readings. New York: Rand McNally Co., 1969, 90-93.

Hoehn, A.J. A study of social status differentiation in the classro behavior of nineteen third-grade teachers. Journal of Social Psychology, 1954, 39, 269-292.

Hughes, M.M. Development of the Means for the Assessment of the Qual of Teaching in Elementary Schools . University of Utah, 1959.

Hsu, F.L.K. Under the Ancestor's Shadow: Kinship, Personality and Social Mobility in China. Stanford University Press, Stanford, California, 1971.

Jackson, D. Multimethod factor analysis in the evaluation of convergent and discriminant validity. Psychological Bulletin, 1969, 72, 30-49.

Jackson, D., Ahmed, S., and Heapy, N.J. Is achievement a unitary construct ? Journal of Research in Personality , 1976 in press.

Jencks, C., Smith M., Ackland, H., Bane, M.J., Cohen, D., Gintis, H., Heyne, B., & Michelson, S. Inequality: A Reassessment of the Effect of Family and Schooling in America, New York: Basic Books, 1972.

Jensen, G.E. The social structure of the classroom group: an observational framework. Journal of Educational Psychology , 1955, 46, 362-374.

Kehle, T.J. Effect of the student's physical attractiveness, sex, race, intelligence, and socioeconomic status on teachers' expectations for the student's personality and academic performance. Unpublished doctoral dissertation, University of Kentucky, 1972.

Kidder, S.J. A multivariate study of two techniques for analyzing social variables in the classroom. Center of Social Organization of Schools Report, Johns Hopkins University, 1971, No. 97.

Kifer, E. Relationships between academic achievement and personality characteristics: a quasi-longitudinal study. American Educational Research Journal, Spring, 1975, 12, 191-210.

Lahaderne, H.M. Adapting to school settings: a study of children's attitude and classroom behavior. Unpublished doctoral dissertation, University of Chicago, 1967.

Lightfoot, A. The potency of social class in determining educational inequalities. In A. Lightfoot (ed.), Inquiries into the Social Foundations of Education. Chicago: Rand McNally Co., 1972, 157-162.

Lindgren, H.C. An Introduction to Social Psychology. New York: John Wil & Sons, 1969.

Meyer, W.J. & Thompson, G.G. Sex differences in the distribution of teacher approval and disapproval among sixth-grade children. Journal of Educational Psychology, 1956, 47, 385-396.

Nielsen, H.D., & Kirk, D.H. Classroom climate. In H.J. Walberg (ed.), Evaluating Educational Performance . Berkeley, California, McCutchan Publishing Co., 1974, 57-79.

Oppenlander, L.C. The relative influence of the group of pupils and of the teacher as determinants of classroom interaction. Unpublished doctoral dissertation, Indiana University, 1969.

Quick, D.M. Toward positive self-concept. Reading Teachers , 1973, 26, 469-471.

Randhawa, B.S. & Fu, L.L. W. Assessment and effect of some classroom environment variables. Journal of Educational Research , 43, #3, 1973, 303-321.

Schmuck, R., & Egmond, E.V. Sex differences in the relationship of interpersonal perception to academic performance. Psychology in the Schools, 1965, 2, 32-40.

Schmuck, P., & Schmuck R. Classroom peer relationship: what can the school psychologist do ? School Psychology Digest, 1973, 2, 4-12.

Spivack, G., & Swift M.S. The Devereux Elementary School Behavior Rating Scale: A study of the nature and organization of achievemen related to disturbed classroom behavior. Journal of Special Education, 1966, 1, 71-90.

St.John, N. The elementary classroom as a frog pond: self-concept, sense of control and social context. Social Forces , 1971, 49, 581-595.

Stodolsky, S.S., & Lesser, G. Learning patterns in the disadvantaged, Harvard Educational Review, 1967, 37, 546-593.

Swift, M.S. & Spivack, G. Clarifying the relationship between academic success and overt classroom behavior. Exceptional Children, 1969, 36, 99-104.

Swift, M.S., Spivack, G., DeLisser, O., Danset, A., Danset-Leger, J., & Winnykamen, F. Children's disturbing classroom behavior: a cross cultural investigation. Exceptional Children, 1972, 38, 492-493.

Tapp , G.S. & Barclay, J.R. Convergent and discriminant validity of the Barclay Classroom Climate Inventory. Educational and Psychological Measurement, 1974, 34, 439-447.

Trailkill, L., & David G. (editors), Statistical program library for the IBM System/360. Lexington Ky., the University Computing Center, University of Kentucky, 1970.

Triandis, H.C. The Analysis of Subjective Culture. New York: Wiley-Interscience, John Wiley, 1972.

Vakil, R. Classroom climate, pupil achievement and attitude. Unpublished doctoral dissertation, Case Western Reserve University, 1970.

Walberg, H.J. Model for optimizing and individualizing learning. Interchange, 1971, 2, 15-27.

Walberg, H.J. & Anderson, G.J. Classroom climate and individual learning. Journal of Educational Psychology, 1968, 59, 414-419.

Whiting, J.W.M. Method and problems in cross-cultural research. Chapter in G. Lindzey and E. Aronson (editors), Handbook of Social Psychology, Vol., 2, Cambridge, Mass.: Addison-Wesley, 1968, 693-728.

Withall, J.G., & Lewis, W.W. Social interaction in the classroom. Chapter in N.L. Gage,(ed.), Handbook of Research on Teaching. Chicago: Rand McNally & Co., 1963, 683-714.

Wylie, R.C. The Self-Concept. University of Nebraska Press, Lincoln Nebraska, 1961.

Wylie, R.C. The Self-Concept. Revised Edition, Volume 1, A Review of Methodological Considerations and Measuring Instruments , University of Nebraska Press, Lincoln, Nebraska, 1974.

Table 1

Summary of Within Culture Comparisons on Multivariate ANOVA by Sex

Dependent Variables	F Value	df	Univariate Contrasts Favoring Boys	Univariate Contrasts Favoring Girls
Sex Differences BCCI Scales	31.28 **	22/ 415	GD, GTOT, REAL, INT SSR, ITR, PRM	SOC, CONV, ART, CNT ESR, FRR, PRF, CCI
Sex Differences BCCI Factor Scores	3.98 **	6/431	Impulsivity, Introversion, Sociability, Enterprising	

Note: P**<.01

Table 2

Summary of Three-Way Multivariate ANOVA Within Culture Comparisons by Sex

Sex	Dependent Variables	Grade (A)	SES (B)	Achievement (C)	A x B	A x C	B x C	A x B x C
Males	BCCI Scales	3.50 **	1.02	4.55 **	1.13	1.51 *	.79	1.16
Df		22/185	44/370	44/370	44/370	44/370	88/734	88/734
Males	Factor Scores	3.15 **	1.19	11.02 **	1.42	1.86 *	.97	.84
Df		6/201	12/402	12/402	12/402	12/402	24/702	24/702
Females	BCCI Scales	3.84 **	1.41 *	3.86 **	2.08 **	1.11	1.07	1.00
Df		22/175	44/350	44/350	44/350	44/350	88/694	88/694
Females	Factor Scores	1.91	1.43	9.57 **	2.19 **	.72	.75	.93
Df		6/191	12/382	12/382	12/382	12/382	24/668	24/668

Note: SES classifications were obtained from the classification of the father's occupation via a coding system used on the teacher rating form of the BCCI.

P *<.05 P **<.01

Table 3

Summary of Three-Way Multivariate and Univariate ANOVA for Cross-Cultural Comparisons on BCCI Scale and Factor Scores

Source	Culture (A)	Sex (B)	Grade (C)	A x B	A x C	B x C	A x B x C	Df
Multivariate F (Scale Scores)	106.95**	84.54**	9.83**	5.04**	1.78*	2.36**	1.46	22/921
Univariate F (Scale Scores)								
STOT	4.08 *	8.73 **	9.87 **	12.78 **	2.73	2.60	.56	1/942
GR	.003	.50	.08	1.86	.03	.80	.01	
GD	.06	48.36 **	.04	1.05	.003	.72	.59	
GTOT	.59	3.12	.05	2.93	.01	.07	2.78	
REAL	5.20 *	170.32 **	7.67 **	.74	11.58 **	2.54	2.05	
INT	193.27 **	31.14 **	.002	2.44	3.16	.01	.02	
SOC	202.21 **	240.42 **	51.19 **	18.85 **	3.10	4.32 *	5.66 *	
CONV	13.14 **	65.58 **	20.61 **	12.57 **	.88	.05	.69	
ENTR	58.23 **	2.59	10.20 **	.76	.06	.22	.49	
ART	36.08 **	34.51 **	16.36 **	3.71 *	.26	.06	.03	
CNT	11.21 **	169.19 **	5.51 *	.27	1.99	8.77 **	.04	
ST	66.91 **	.003	9.36 **	6.36 **	1.37	1.71	.79	
TR+	4.75 *	23.23 **	.84	15.81 **	.13	1.25 *	.12	
TR-	21.47 **	14.52 **	32.19 **	4.97 *	.74	3.94 *	2.08	
CCI	17.74 **	74.84 **	28.32 **	12.38 **	1.12	2.68	1.52	
Multivariate F (Factor Scores)	22.14 **	31.75 **	4.11 **	38.31 **	1.09	2.24 *	3.27 **	6/937
Univariate F (Factor Scores)								
Ach.-Motivation	7.59 **	7.10 **	.66	14.38 **	.90	.15	.48	1/942
Impulsivity	23.28 **	2.67	15.28 **	20.58 **	1.92	1.16	2.54	
Introversion	20.54 **	34.95 **	3.75 *	75.98 **	.08	.01	.04	
Energy	1.88	34.32 **	3.97 *	7.83 **	.02	.26	1.99	
Sociability	10.52 **	18.92 **	.16	51.79 **	.20	.03	4.65 *	
Enterprising	13.47 **	40.09 **	.24	3.06	1.29	7.41 **	2.73	

Note: Culture main effects have eliminated sex and grade differences, while sex main effects have eliminated culture and grade differences, and grade main effects have eliminated culture and sex differences. P * <.05, ** <.01 .

Table 4

Correlations for Chinese Boys and Girls: BCCI Scale Scores to Intelligence and Achievement on Selected Major Variables

Variable	Boys			Girls		
	Intelligence	Achievement Pre	Post	Intelligence	Achievement Pre	Post
STOT	.071	.199**	.115	.050	.160	.117
GR	-.167*	-.254**	-.195**	.030	-.074	-.050
GD	-.146*	-.243**	-.208**	-.003	-.121	-.083
GTOT	.151*	.373**	.354**	.228**	.397**	.376**
TR+	.154*	.435**	.413**	.195**	.426**	.354**
TR-	-.210**	-.550**	-.359**	-.205**	-.445**	-.292**
CCI	.114	.279**	.178*	-.056	.193**	.152*

Note: N for boys = 224, for girls 214. P at .05* = .133, P at .01** = .174.

Table 5

Correlations for Chinese Boys and Girls: BCCI Factor Scores to Intelligence and Achievement

Variable	Boys			Girls		
	Intelligence	Achievement Pre	Post	Intelligence	Achievement Pre	Post
Achievement-Motivation	.139*	.360**	.292**	.225**	.321**	.302**
Impulsivity	-.133*	-.287**	-.162*	-.116	-.327**	-.200**
Introversion	-.239**	-.321**	-.244**	-.060	-.316**	-.225**
Energy	.149*	.218**	.263**	.235**	.357**	.324**
Sociability	.153*	.503**	.445**	.194**	.415**	.362**
Enterprising	.140*	.370**	.344**	.155**	.327**	.300**

Note: N for boys = 224, for girls 214. P at .05*=.133, P at .01** = .174. For both tables 4 & 5 Intelligence is the T-score on the Raven Progressive Matrices. Achievement is the average grade on the subjects of Chinese, mathematics, social science and natural science semester pre and post to BCCI

Table 6

Summary of Step-Wise Regressions Using Chinese Achievement as the Dependent Variable

Dependent Variable	Independent Variables	Total Variance Accounted for
Achievement (Boys) (Scale Scores)	TR+ (.413), ITR (.271), TR-(-.359) Intelligence (.200), GTOT (.354) and PRF (-.012)	34%
Achievement (Boys) (Factor Scores)	Sociability (.445), Intelligence (.200), Impulsivity (-.162), Introversion (-.244), Enterprising(.344)	29%
Achievement (Girls) (Scale Scores)	GTOT(.376), Intelligence (.369), TR+ (.354), GR (-.050), PRM (-.103), ITR (.273)	35%
Achievement (Girls) (Factor Scores)	Intelligence (.369), Sociability (.362), Introversion (-.225), Enterprising (.300)	27%

Note: N = 224 boys and 214 girls. Parentheses specify simple correlations with dependent variable. All independent variables contribute .05 % of variance or more.